APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,327	03/29/2004	Paul James Broyles III	200313477-1	2718

			EXAMINER
22879	7590	09/01/2005	CHERRY, STEPHEN J

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ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding..

	Application No.	Applicant(s)
Office Action Summary	10/812,327	BROYLES ET AL.
	Examiner	Art Unit	
	Stephen J. Cherry	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 June 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-28</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-28</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>29 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 4-12, 14-17, and 19-28 rejected under 35 U.S.C. 103(a) as being

unpatentable over U.S. Patent No. 6,496,346 to Bruckner.

With regard to claim I the primary reference to Bruckner discloses a method for

cooling a processor based device contained in a computer (see abstract), by

determining the temperature of the device (see column 4 line 32-36), and adjusting

computer operation so as to reduce the temperature of the device if that temperature is

deemed to be too high (see column 2 line 58 through column 3 line 47). However,

Bruckner fails to disclose specifically the processor based device is a storage device.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have used the temperature control method of Bruckner for a

processor based device within a storage device that contains a processor.

Accordingly, such a modification would have been obvious since Bruckner teaches a

processor based storage device such as a hard disk drive may suffer in performance if

operated beyond certain temperature conditions (see column 1 line 40-45 & column 2

line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 2, and applying the rejection of claim 1 above, Bruckner

discloses determining the temperature of the device by measuring the temperature of

the device using a temperature sensor provided in or on the device (see column 4 line

32-36).

With regard to claim 4, and applying the rejection of claim 1 above, Suzuki et al.

discloses reducing the temperature of the storage device by increasing the speed of a

fan contained within the computer (see column 3 line 4-10).

With regard to claim 5, and applying the rejection of claim 1 above, Suzuki et al.

discloses reducing the temperature of the storage device by adjusting the operation of a

processor contained within the computer (see column 2 line 58-65).

With regard to claim 6, and applying the rejection of claim 5 above, Bruckner

discloses reducing the clock speed of the processor (see column 2 line 58-65).

With regard to claim 7, and applying the rejection of claim 5 above, Bruckner

discloses reducing a voltage provided to the processor (see column 4 line 45-54).

With regard to claim 8, and applying the rejection of claim 1 above, Bruckner

discloses 2 reducing the temperature by shutting down the computer (see column 3 line

38-47).

With regard to claim 9, and applying the rejection of claim 1 above, Bruckner

discloses reducing the temperature by first increasing the speed of a fan contained in

the computer (see column 2 line 53) and, if the storage device is later determined to still

be too hot, reducing one or both of a clock speed of and a voltage provided to a

processor contained in the computer (see column 2 line 54-56) and, if the storage

device is still later determined to be too hot, shutting down the computer (see column 1

line 55-61 & column 3 line 27-29).

With regard to claim 10, and applying the rejection of claim 1 above, Bruckner

discloses data regarding temperature operating parameters of the storage device and

using that data to determine whether the storage device is or is not too hot (see Table

1).

With regard to claim 11 Bruckner discloses a method for cooling a processor

based device contained in a computer (see abstract) by periodically measuring the

temperature of the device (see column 4 line 32-36), with a temperature sensor

provided in or on the device (see column 4 line 32-36), and periodically providing

temperature data including the measured temperature and temperature operating

parameters for the device to a basic input/output system (BIOS) so that the BIOS can

control operation of the computer in an effort to cool the device (see column 3 line 30-

37).

However, Bruckner fails to disclose specifically the processor based device is a

storage device.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have used the temperature control method of Bruckner for a

processor based device within a storage device that contains a processor.

Accordingly, such a modification would have been obvious since Bruckner teaches a

processor based storage device such as a hard disk drive may suffer in performance if

operated beyond certain temperature conditions (see column 1 line 40-45 & column 2

line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 12, and applying the rejection of claim I 1 above, Bruckner

discloses measuring the temperature of the device in response to commands received

by a device driver stored memory of the computer (see column 3 line 30-37).

With regard to claim 14, and applying the rejection of claim I I above, Bruckner

discloses periodically providing temperature data by providing the data to a storage

device driver of the computer that provides the data to the BIOS (see column 3 line 30-

37).

With regard to claim 15, and applying the rejection of claim 11 above, Bruckner

discloses periodically providing temperature by providing information regarding an ideal

temperature operating range and a critical temperature to the BIOS (see Table 1 &

column 3 line 30-37).

With regard to claim 16 Bruckner discloses a system for cooling a processor

based device in a computer (see abstract) with means for measuring the temperature of

the device (see column 4 line 32-36), the means being directly associated with the

device (see column 4 line 32-36), means for sending the measured temperature (see

column 4 line 32-34), and means for adjusting operation of the computer in relation to

the measured temperature (see column 2 line 58 through column 3 line 47).

However, Bruckner fails to disclose specifically the processor based device is a

storage device.

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have used the temperature control method of Bruckner for a

processor based device within a storage device that contains a processor.

Accordingly, such a modification would have been obvious since Bruckner teaches a

processor based storage device such as a hard disk drive may suffer in performance if

operated beyond certain temperature conditions (see column 1 line 40-45 & column 2

line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 17, and applying the rejection of claim 16 above, Bruckner

discloses a temperature sensor provided in or on the storage device (see column 4 line

32-36).

With regard to claim 19, and applying the rejection of claim 17 above, Bruckner

discloses the means for sending the measured temperature comprise a controller of the

device (see column 4 line 32-34).

With regard to claim 20, and applying the rejection of claim 17 above, Bruckner

discloses the means for adjusting operation of the computer comprises a basic

input/output system (BIOS) (see column 3 line 30-37).

With regard to claim 21, and applying the rejection of claim 20 above, Bruckner

discloses the BIOS is configured to increase the speed of a fan contained in the

computer (see column 2 line 53), reduce one or both of a clock speed of and a voltage

provided to a processor contained in the computer (see column 2 line 54-56), or shut

down the computer if the device is too hot (see column 1 line 55-61 & column 3 line 27-29).

With regard to claim 22 Bruckner discloses a system stored on a computer readable medium (see column 3 line 30-37) with logic configured to read a temperature of a processor based device (see column 4 line 32-36), logic configured to command the logic configured to read a temperature to read that temperature (see column 4 line 34-36 & column 5 line 5-6) and logic configured to receive the read temperature and to control operation of a computer relative to the read temperature (see column 2 line 58 through column 3 line 47). However, Bruckner fails to disclose specifically the processor based device is a storage device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to. have used the temperature control method of Bruckner for a processor based device within a storage device that contains a processor. Accordingly, such a modification would have been obvious since Bruckner teaches a processor based storage device such as a hard disk drive may suffer in performance if operated beyond certain temperature conditions (see column 1 line 40-45 & column 2 line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 23, and applying the rejection of claim 22 above, Bruckner discloses the logic configured to read a temperature is configured to reside in memory of the device (see column 3 line 3037).

With regard to claim 24, and applying the rejection of claim 22 above, Bruckner discloses logic configured to read a temperature comprises a storage device driver (see column 3 line 303 7).

With regard to claim 25, and applying the rejection of claim 22 above, Bruckner discloses the logic configured to command the read temperature and to control operation of a computer comprises a computer basic input/output system (BIOS) (see column 3 line 30-37).

With regard to claim 26 Bruckner discloses a thermal monitor (see abstract) with logic configured to command a processor based device driver to periodically collect temperature data from the device (see column 3 line 30-37 & column 4 line 32-36 & column 5 line 5-6), with logic configured to provide the collected temperature data to a computer basic input/output system (BIOS) to enable the BIOS to control operation of the computer (see column 3 line 30-37 & column 2 line 58 through column 3 line 47).

However, Bruckner fails to disclose specifically the processor based device is a storage device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the temperature control method of Bruckner for a processor based device within a storage device that contains a processor. Accordingly, such a modification would have been obvious since Bruckner teaches a processor based storage device such as a hard disk drive may suffer in performance if operated beyond certain temperature conditions (see column 1 line 40-45 & column 2 line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 27 Bruckner discloses a computer basic input/output system (BIOS) (see column 3 line 30-37), with logic configured to receive a temperature of a processor based device measured by the device (see column 4 line 32-36), logic configured to compare the measured temperature with temperature operating parameters for the device (see Table 1), and logic configured to control operation of a computer in which the device is provided in a manner that reduces the temperature of the device (see column 2 line 58 through column 3 line 47). However, Bruckner fails to disclose specifically the processor based device is a storage device.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the temperature control method of Bruckner for a processor based device within a storage device that contains a processor. Accordingly, such a modification would have been obvious since Bruckner teaches a processor based storage device such as a hard disk drive may suffer in performance if operated beyond certain temperature conditions (see column 1 line 40-45 & column 2 line 44-47), thereby suggesting the obviousness of the modification.

With regard to claim 28, and applying the rejection of claim 27 above, Bruckner discloses the logic is configured to control operation of a computer comprises logic configured to increase the speed of a fan contained in the computer (see column 2 line 53), reducing one or both of a clock speed of and a voltage provided to a processor contained in the computer (see column 2 line 54-56), or shut down the computer if the storage device is too hot (see column 1 line 55-61 & column 3 line 27-29).

Claims 3, 13, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Patent No. 6,496,346 as applied to claims 1, 11, and 17 above, and further in view

of U.S. Patent No. 6,169,442 to Meehan et al.

With regard to claims 3, 13, 18 the primary reference to Bruckner fails disclose

measuring the temperature of the storage device using a thermal diode of the device.

The secondary reference to Meehan et al. discloses using a thermal diode to measure

the temperature of a storage device (see column 12 line 17-20).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to have specified measuring the temperature of the storage device

using a thermal diode of the device. Accordingly, such a modification would have been

obvious since Meehan et al. teaches using a thermal diode allows for remotely

measuring temperature of a device (see column 12 line 23-25), thereby suggesting the

obviousness of the modification.

Response to Arguments

Applicant's arguments filed 6-6-2005 regarding claims 1-28 have been fully

considered but they are not persuasive.

Applicant states that the Bruckner reference, '346, does not teach or suggest

monitoring the temperature of a storage device. At col. 4, line 14, Bruckner describes

monitoring the temperature of a broad class of processors, including microprocessors,

microcontrollers, Pentium processors, etc. Bruckner does not explicitly disclose each of

the class of devices as a storage device, and it may be possible that some type of

processor is a device that does not store information; thus, a rejection was not made

under 35 U.S.C. 102. However, it is not clear to the examiner which of the disclosed

class of devices would not suggest to one of ordinary skill in the art a device that stores

information, thereby meeting the limitation, "storage device". For example, Bruckner

discloses the processor as a microcontroller. Horowitz and Hill, in "The Art of

Electronics", pages 342-343, describe a device, a microcontroller suitable for

standalone use, which comprises several levels and several types of storage including

RAM, ROM, registers, counters, etc. While every processor, as the word is interpreted

by one of skill in the art, may not include each of these types of storage, it is unknown to

the examiner which of the group of processors does not include at least one device that

stores information. Thus, Bruckner, although not explicitly disclosing storage devices,

suggests many types of devices that include storage. If, however, applicant wishes that

the term storage device be interpreted to carry some further meaning, that meaning

should be defined in the language of the claim.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Cherry whose telephone number is (571) 272-2272. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SJC

MICHAEL NGHIEM
PRIMARY EXAMINER